

# NASA TECH BRIEF

## *Lewis Research Center*



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### Variable Boundary II Heat Conduction

A program has been developed which solves both transient and steady-state heat transfer problems. The problems are represented as one, two, three dimensional rectangular grid or a resistance-capacitance circuit analog, boundary condition employable radiation, free and forced convection, aerodynamic heating, and arbitrary constant or time dependent heat fluxes.

A heat balance is formulated for individual nodes of the solid medium, and a numerical approximation of the diffusion equation is solved for all nodes simultaneously at finite increments of time.

#### Notes:

1. This program allows up to 250 nodes and 210 heat flux tables. The program is written in FORTRAN IV for CDC-6400 computer.

2. Inquiries concerning this program should be directed to:

COSMIC  
Barrow Hall  
University of Georgia  
Athens, Georgia 30601  
Reference: LEW-10679

#### Patent status:

No patent action is contemplated by NASA.

Source: J. Gramer and R. F. O'Neill of  
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